

REMARKS

Claims 1-22 were rejected and remain pending in the instant application.

In response, Applicant offers to amend claim 12, as set forth above, in order to correct a typographical error. The amendments are fully supported by the original disclosure, and no new matter is believed to be added. Further, as the amendment does not change the scope of the claims, no new search is required.

For at least the reasons set forth below, the pending claims are believed to be allowable. Entry of the offered amendment and allowance of the pending claims is respectfully requested.

Claim Rejections Under 35 U.S.C. § 103

Claims 1-6, 9-13 and 19-22 were rejected under 35 USC 103(a) as allegedly being unpatentable over US Publication No. 2003/0048260, issued to Matusis. Claims 7, 8 and 14-16 were rejected under 35 USC 103(a) as allegedly being unpatentable over Matusis in view of US Patent No. 6,888,532, issued to Wong. Claims 17-18 were rejected under 35 USC 103(a) as allegedly being unpatentable over Matusis in view of US Patent No. 6,538,636, issued to Harrison.

Applicants respectfully maintain, for at least the reasons previously discussed, that Matusis, Wong, and Harrison fail to teach or suggest the recitations of the claims (see *e.g.*, Response filed June 1, 2010). In addition, the pending claims are allowable over the cited references for at least the reasons discussed below.

Claims 1-6, 9-13 and 19-22

Claim 1 recites an apparatus comprising, in pertinent part, “. . . a detection mechanism configured to *detect one or more movements* of at least a portion of at least one of the user's two hands *toward the key to indicate, prior to an activation of the key by one of the terminating members*, which one of said first function and said second function *is to be associated* with the activation, wherein the detection mechanism is configured to indicate that the first function *is to be associated* with the activation when a right-to-left movement of a terminating member of the right hand *toward* the key is detected and the detection

mechanism is configured to indicate that the second function *is to be associated* with the activation when a left-to-right movement of a terminating member of the left hand *toward* the key is detected..”

Thus, read properly as a whole as required by law, claim 1 requires a detection mechanism configured to indicate which of the functions is to be associated with the activation of the key **before the key is activated**.

Matusis does not teach or suggest the features of claim 1. At most, Matusis discloses determining a function to be associated with an input sensor *during or after* activation of the input sensor. In an embodiment that uses imaging to determine the selected finger and function, the imaging means 1120 “images a part of the user’s hand large enough to identify the selected fingertip *touching and activating input sensor 1110*” (emphasis ours; paragraph [0052]). The image is taken *at the time* of input sensor 1110 activation (see e.g. paragraph [0055]). Alternatively, where imaging means 1120 acquires a continuous stream of image frames, *the time of activation or time of contact* is obtained from input sensor 1110 along with the image frames from imaging means 1120 “in order to synchronize the images with the time of activation or time of contact” (paragraphs [0055]; see also paragraph [0063]). Processing means 1130 then processes the inputs from input sensor 1110 (including timing of input sensor activation) and imaging means 1120 (including image data) in order to identify the selected function based on those inputs (paragraphs [0056]–[0063]). Thus, in order for processing means 1130 to determine the function to be associated with the input sensor, the processing means 1130 must be provided with a finger image taken *at the time* of input sensor activation or with a series of images and a timeline for synchronization of the images with the timestamp from the input sensor.

Matusis also discloses that the input sensor may be “not only capable of detecting on/off activation, but also capable of detecting a motion that is performed by the user *at the same time when the user activated the input sensor*” (emphasis ours; paragraph [0044]; see also Figure 10, showing motion of finger across surface of input sensor, and paragraph [0017]). As indicated in Figure 4, the user must still touch and activate the input sensor with the selected finger in order for the device to determine functions based on finger motion; moreover, the disclosed finger motion is motion *on* the input sensor (Figure 4, block 220; see

also paragraph [0045]). Such motion cannot be said to teach or suggest movements “toward the key.”

Further, while Matusis discloses “identifying vertical motion of the fingertip toward input sensor 1110 over a series of image frames before or after activation of the input sensor,” this passage merely refers to the manner in which software algorithms could distinguish the static background field in image 1200 and the moving parts of the hand in image 1200 (paragraph [0068]). Matusis neither teaches nor suggests identifying vertical motion of the fingertip toward the input sensor for any purpose other than distinguishing between finger and background in a captured image. On the contrary, the preceding paragraph states that where motion is defined with respect to a *function*, “the *electrical (e.g. resistive) changes* as a function of time *during the motion of the selected finger over input sensor 1110* need to be interpreted” (paragraph [0067]; see also Figure 10; paragraph [0051], “FIG. 10 shows an example whereby the activation is expanded by including motion performed through the selected fingertip on the input sensor (or a stroke by the fingertip on the input sensor.”).

Thus, Matusis neither teaches nor suggests “. . . a detection mechanism configured to *detect one or more movements* of at least a portion of at least one of the user's two hands *toward the key to indicate, prior to an activation of the key by one of the terminating members*, which one of said first function and said second function *is to be associated* with the activation.” Again, Matusis merely discloses an apparatus that assigns a function to the input sensor *during* the touching of the input sensor with the fingertip or *after* the input sensor has been activated or touched by the selected fingertip. Where finger motion is used to determine a selected function, Matusis teaches that the finger motions performed *on* the input sensor. With regard to detecting movements of a finger *toward* the input sensor, Matusis merely discloses detecting a finger's vertical movement toward the input sensor over a series of image frames *to distinguish the user's fingers from the static background in received images*. Such images could not, in any case, be used by the device of Matusis to indicate a function prior to activation of the input sensor – Matusis teaches that, where single images or streams of images are being used to determine the selected function, the processor requires the timing/timestamp of input sensor activation and the image data in order to make the determination. Therefore, Matusis neither teaches nor suggests the above feature.

For at least the same reasons, Matusis also does not teach or suggest “wherein the detection mechanism is configured to indicate that the first function *is to be associated* with the activation when a right-to-left movement of a terminating member of the right hand *toward* the key is detected and the detection mechanism is configured to indicate that the second function *is to be associated* with the activation when a left-to-right movement of a terminating member of the left hand *toward* the key is detected.” (see also Final Office Action, pg. 4, conceding that Matusis does not teach “that the first function is associated with the activation when a right-to-left movement of a terminating member of the right hand is detected . . .”). However, the Examiner stated that “Matusis already teaches both associating different motions with different functions [0045] as well as teaching capturing continuous frame prior to activation to detect movement toward the input sensor” (Final Office Action, pg. 4). Applicants respectfully submit that this statement does not accurately reflect the teachings of the reference.

First, as discussed above, Matusis teaches associating different motions of a finger **on the surface of an input sensor** during/after sensor activation – not movements *toward* the input sensor *prior to* activation – with various functions. Second, Matusis does not disclose the capturing of continuous frames prior to activation “to detect movement toward the input sensor.” Matusis merely discloses that the vertical motion of a selected fingertip toward a key may be identified over a series of images *to distinguish the user’s finger(s) from the background* in the images. And where continuous frames are being taken by an imaging device and used by the processor to determine a function, the processor also requires the input sensor activation timestamp and image timeline in order to make the determination.

The Examiner also took Official Notice that “using movement of an object to assist in identifying the object is well known in the field of optical recognition” (page 4, Final Office Action). Official Notice without documentary evidence is permissible only in some circumstances, and these circumstances should be **rare** when an application is under final rejection. Moreover, assertions of technical facts in the areas of esoteric technology **or specific knowledge of the prior art** must always be supported by citation to some reference work recognized as standard in the pertinent art. MPEP 2144.03, citing *In re Ahlert*, 424 F.2d at 1091, 165 USPQ at 420-21. Applicants respectfully submit that the use of Official Notice in the Final Office Action is therefore improper.

However, assuming for the sake of argument that the use of Official Notice is proper and that the Examiner's assertion with regard to knowledge in the art is correct, the use of Official Notice does not remedy the above-noted deficiencies of Matusis. At most, combining knowledge of "using movement of an object to assist in identifying the object" with the disclosure of Matusis might result in a device that identifies the selected finger based at least partially on the motion of that finger. But the combination would neither teach nor suggest "a detection mechanism configured to detect . . . movements . . . toward the key *to indicate, prior to an activation of a key by one of the terminating members, which function is to be associated* with the activation of the key."

Finally, it was asserted on page 4 of the Final Office Action that "one of ordinary skill in the art at the time of the invention would have found it obvious that using the direction from which the fingertip approaches the input sensor could be used to aid in identifying which hand and therefore which function should be associated with the input to achieve the predictable result of allowing a single input sensor to be associated with multiple functions." But Applicants note that even if the suggested combination could be said to teach or suggest the recitations of claim 1, the device of Matusis **already allows a single input sensor to be associated with multiple functions**. A person having ordinary skill in the art and seeking to associate a single input sensor with multiple functions could do so using the device of Matusis without modification. No suggestion or motivation has been provided for combining the disclosure of Matusis with the cited knowledge in the manner suggested. Therefore, the Final Office Action fails to establish a prima facie case of obviousness.

For at least the above reasons, claim 1 is allowable over Matusis.

Claims 12 and 19 are directed to an apparatus and a method, respectively, and recite features substantially similar to those of claim 1. Claims 12 and 19 are therefore allowable over Matusis for at least the same reasons.

Claims 5-11, 13, and 20-22 depend from claims 1, 12, or 19, respectively, incorporating the recitations of their base claims. Therefore, claims 5-11, 13, and 20-22 are allowable for at least the same reasons. With regard to claims 7 and 8, Applicants note that Wong fails to remedy the deficiencies of Matusis, as discussed below.

Claims 5-11, 13, and 22 are also allowable by virtue of their additional recitations, which are not taught or suggested by the cited references.

Claims 7, 8, 14-16, and 17-18

Claims 14 and 17 are directed to apparatuses with features substantially parallel to those of claim 1. While claim 1 recites “a detection mechanism,” claim 14 recites “at least one pressure sensor” and claim 17 recites “a motion sensor.” Matusis fails to teach the features of claims 14 and 17 for at least the reasons discussed above with respect to claim 1. In addition, as conceded in the Final Office Action, Matusis fails to teach “at least one pressure sensor” (pg. 12) or “a motion sensor . . .” (pg. 15). Applicants respectfully note that the quoted language appearing on pages 12 and 15 of the Final Office Action does not reflect the current language of claims 14 and 17.

Wong was cited for teaching an input device with pressure sensors (see pg. 12-13 of Final Office Action). However, the cited figures and passage of Wong merely disclose an electronic device with sensor pads 312 corresponding to a contact-sensitive surface that detects contact from a user (col. 5, lines 42-63). The sensor system of the device detects an orientation of the electronic device (col. 5, lines 45-48), and components of the device are configurable based on the orientation (col. 2, lines 35-40).

Harrison was cited for teaching a portable device with motion detectors “which can detect the orientation of the portable devices, and change the function of the input keys according to the orientation” (see pg. 15 of Final Office Action). However, the cited figures of Harrison merely indicate sensors 3a and 3b, which sense the orientation of the device as up-side down or right-side up (col. 3, lines 3-10). The device’s appearance and behavior are reconfigured in response to the determined orientation or user input (see Abstract).

Wong and Harrison fail to remedy the above-identified deficiencies of Matusis. In particular, the cited combination fails to teach or suggest a “motion sensor to” (claim 17) or “at least one pressure sensor configured to” (claim 14) “detect movements of at least a portion of at least one of the user’s two hands toward the key to indicate, prior to an activation of the key by one of the terminating members, which one of said first function and said second function is to be associated with the activation” and “wherein the” [pressure sensor or motion sensor] “is configured to indicate that the first function is to be associated

with the activation when a right-to-left movement of a terminating member of the right hand toward the key is detected and the” [pressure sensor or motion sensor] “is configured to indicate that the second function is to be associated with the activation when a left-to-right movement of a terminating member of the left hand toward the key is detected.”

For at least the above reasons, claims 14 and 17 are allowable over the cited references, alone or in combination.

Claims 7-8, 15-16, and 18 depend from claims 1, 14, or 17, respectively, incorporating the recitations of their base claims. Therefore, claims 7-8, 15-16, and 18 are allowable for at least the same reasons. Claims 7-8, 15-16, and 18 are further allowable over the cited reference by virtue of their additional recitations, which are not taught or suggested by Matusis.

Therefore, all pending claims are believed to be in condition for allowance. Reconsideration of the rejections and allowance of the claims is respectfully requested.

CONCLUSION

In view of the foregoing amendments and remarks, Applicants believe the applicable rejections have been overcome and all claims remaining in the application are presently in condition for allowance. Accordingly, favorable consideration and a Notice of Allowance are earnestly solicited. The Examiner is invited to telephone the undersigned representative at (206) 622-1711 if the Examiner believes that an interview might be useful for any reason.

It is not believed that extensions of time are required beyond those that may otherwise be provided for in documents accompanying this paper. However, if additional extensions of time are necessary to prevent abandonment of this application, then such extensions of time are hereby petitioned under 37 C.F.R. § 1.136(a). If the Examiner has any questions concerning the present paper, the Examiner is kindly requested to contact the undersigned at (206) 407-1569. If any fees are due in connection with filing this paper, the Commissioner is authorized to charge the Deposit Account of Schwabe, Williamson and Wyatt, P.C., No. 50-0393.

Respectfully submitted,

Date: September 28, 2010

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